Watershed Wards Creek
HUC 10 0312000101

STATE OF GEORGIA

TMDL IMPLEMENTATION PLAN
WATERSHED APPROACH
Ochlockonee River Basin

Local Watershed Governments
Thomas County
City of Metcalf
Other _____

TMDL Implementation Plans are platforms for establishing a course of actions to restore the quality of impaired water bodies in a watershed. They are intended as a continuing process that may be revised as new conditions and information warrant. Procedures will be developed to track and evaluate the implementation of the management practices and activities identified in the plans. Once restored, appropriate management practices and activities will be continued to maintain the water bodies.

With input from appropriate stakeholder groups, a TMDL Implementation Plan has been developed for a cluster of impaired streams and the corresponding pollutants. The impaired streams are located in the same sub-basin identified by a HUC10 code (Figure 1).

This Implementation Plan addresses an action plan, education/outreach activities, stakeholders, pollutant sources, and potential funding sources affecting the sub-basin. In addition, the Plan describes (a) regulatory and voluntary practices/control actions (*management measures*) to reduce target pollutants, (b) milestone schedules to show the development of the management measures (*measurable milestones*), (c) a monitoring plan to determine the efficiency of the management measures and measurable milestones, and (d) criteria to determine whether substantial progress is being made towards reducing pollutants in impaired waterbodies. The overall goal of the Plan is to define a set of actions that will help achieve water quality standards in the state of Georgia. Following this section is information regarding individual segments.

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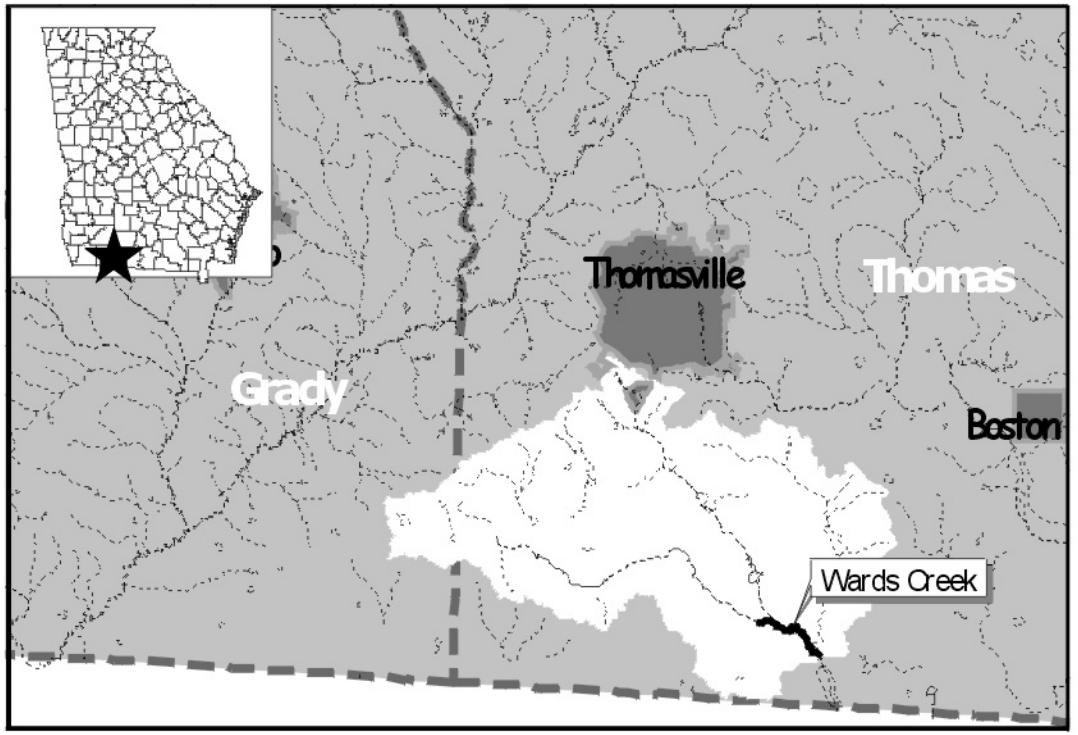

FIGURE 1

Impaired Waterbody	Impaired Stream Location	Impairment
1. Wards Creek	Pine Cr. to McKeever Slough E. of Metcalf	Dissolved oxygen

*These Waterbody Numbers are referenced throughout the Implementation Plan.

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Action Plan for Ward Creek Watershed

POLLUTANT:	SOURCE:	EFFECT:	WHAT CAN I DO?	
			At Home: Community, School	At Work: Business, Government
x Dissolved Oxygen (DO) __ Fecal Coliform (FC) __ Sediment __ Metals __ Fish Consumption Guidelines (FCG) __ Other (Please List)	? Industrial __ Urban ? Agriculture __ Forestry __ Residential x Other (Please List) Natural	x Habitat __ Recreation __ Drinking Water __ Aesthetics __ Other (Please List) Fishing	Do not let water and/or chemicals run off your property. Do not dump trash, appliances, or dead animals off the bridges. Participate in river educational Events. Use the Georgia Best Management Practices I n land management	Monitor the quality of water above and below your property. Install/maintain buffers to protect the wetlands. Follow the Georgia Best Management Practices in land management. Support educational activities in your community. Be sure that your employees and contractors follow the BMPs.

INFORMATION/EDUCATION/OUTREACH ACTIVITIES

An education/outreach component will be used to enhance public understanding of and participation in implementing the TMDL Implementation Plan.
List of all previous and planned information/education/outreach activities.

Responsible Organization Or Entity	Description	Impacted Waterbodies*	Target Audience	Anticipated Dates (MM/YY)
Georgia EPD	Adopt-A-Stream	Entire Basin	All Residents	11/02
Friends of the Ochlockonee River	No-profit organization serving the stakeholders	Entire Basin	All Residents	11/02
Ga Forestry Commission	Field Day for Land Owners to demonstrate Georgia BMPs	Entire Basin	All Landowners	02 or 03/03
Thomas University	Develop and Implement educational materials	Entire Basin	All School Children & TV audiences	Pre-proposal: 12/02

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STAKEHOLDERS

EPD encourages public involvement and the active participation of stakeholders in the process of improving water quality. Stakeholders can provide valuable information and data regarding their community and the impaired water bodies and can provide insight and/or implement management measures.

List of local governments, agricultural organizations or significant landholders, commercial forestry organizations, businesses and industries, and local organizations including environmental groups and individuals with a major interest in this watershed.

Name/Organization	Address	City	State	Zip	Phone	E-Mail
Georgia EPD	4220 Inter. Pkwy Suite 101	Atlanta	GA	30354	404.675.1614	Ted_Mikalsen@mail.dnr.state.ga.us
Thomas County	225 N. Broad St.	Thomasville	GA	31792	229.225.4100	
City of Coolidge	P.O. Box 156	Coolidge	GA	31738	229.346.3551	
The Nature Conservancy	18 North Main St.	Moultrie	GA	31768	229.985.8117	www.Georgiaconservancy.org
Tall timbers Research Station	13093 Henry Beadel Dr.	Tallahassee	FL	32312	850.893.4153	www.talltimbers.org
International Paper	719 Southlands Rd.	Bainbridge	GA	31717	229.246.3642	Rebexxa.winn@paper.com
Friends of the Ochlockonee	1501 Millpond Rd.	Thomasville	GA	31792	229.226.1621	
Ga. Forestry Commission	3561 Highway 112	Camilla	GA	31730	229.522.3580	gfindley@gfc.state.ga.us
Southwest Georgia FDC	30 West Broad St.	Camilla	GA	31730	229.522.3552	amacdonald@swgrdc.org
USDA NRCS	404 N. Broad St. Room 203	Thomasville	GA	31792	229.226.3462	
John Bullock	Bullock Rd.	Ochlocknee	GA	31765	229.683.3420	
Mary Jo Beverly	426 S. Hansell St.	Thomasville	GA	31792	229.228.0184	
Prince Jinright	517 Wildwood Dr.	Thomasville	GA	31792	229.227.0726	rjnright@wlbtv.net
Fred Cooper	2820 Bullock Rd.	Ochlocknee	GA	31773	229.683.3738	
Wallace Sholar	P.O. Box 868	Cairo	GA	39828	229.227.6200	
Colquitt County	P.O. Box 517	Moultrie	GA	31776	229.985.4029	
Colquitt Chamber of Commerce	P.O. Box 487	Moultrie	GA	31776	229.616.7400	
Moultrie Utilities Department	P.O. Box 3368	Moultrie	GA	31776	229.890.5432	
Brian Marlowe	P.O. Box 517	Moultrie	GA	31776	229.616.7400	
Randy Bryant	628 b Theran Tillman Rd.	Coolidge	GA	31738	229.346.3041	
Lydia Carlton	5302 Patten Coolidge Rd.	Coolidge	GA	31738	229.346.3291	
William Fallin	P.O. Box 250, 39 N. Main St.	Moultrie	GA	31776	Unlisted	

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WATER BODIES/STREAMS COVERED IN THIS PLAN:

These impaired streams are located in the same sub-basin identified by a HUC10 code. Most of the information contained in this section comes from the 303(d) list and has been completed by employees of the EPD Water Protection Branch. Data that placed stream on 303(d) list will be provided upon request.

Waterbody Name #1	Location	Miles/Area Impacted	Use Classification	Partially Supporting/ Not Supporting (PS/NS)
Wards Creek	Pine Cr. to McKeever Slough E. of Metcalf	3	Fishing	NS

Primary County	Secondary County	Second RDC	Source (Point/ Nonpoint)
Thomas			Nonpoint

Pollutants	Water Quality Standards	Required Reduction	TMDL ID	Date TMDL Established
Dissolved Oxygen	5mg/l (daily average) 4 mg/l (minimum) Natural DO lower than state standard. Calculated target DO 1.08 mg/l.	21% (TOC lb/yr) 22% (TN lb/yr) 22% (TP lb/yr)		12/2001

POLLUTANT SOURCES




It is important to recognize the potential source(s) causing water quality impairment. Each source must be controlled to comply with target TMDL/Load Allocations for each pollutant. Included is a description of how the sources contribute to the impairment and the waterbody that is impaired. List of major nonpoint source categories and sub-categories or individual sources (Urban Runoff, Agriculture, Forestry, Municipal Sewage Treatment Plant)

Pollutant	Sources of Pollutants	Description of Contribution To Impairment	Impacted Waterbodies*
DO	Non Point	Failure to prevent runoff from farming &/or livestock operations from entering the creeks	Wards Creek
Low DO	Natural	Stream below critical conditions: High temperatures and low flow contribute to low levels of dissolved oxygen in the stream.	Wards Creek

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MANAGEMENT MEASURES, MEASURABLE MILESTONES AND SCHEDULE 

(i.e. Local codes and ordinances, Erosion and Sedimentation Control, Storm Water Management, Local water resource monitoring)

The following table lists management measures that have been or will be implemented to achieve water quality standards and the load reductions established in the TMDL. The management measures, including regulatory or voluntary actions or other controls by governments or individuals, specifically apply to the pollutant and the waterbody for which the TMDL was written. A description is provided of how these management measures are/will be accomplished through reliable and effective delivery mechanisms, and how these management measures are/will help achieve the target TMDL. Included is the source of the pollutant, anticipated/past effectiveness of the management measure (very effective, somewhat effective, not effective), the current status (i.e. enforced, in-progress, planning), and measurable milestones and schedule. Milestones are used to measure progress in attaining water quality standards and to determine whether management measures are being implemented.

Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/ Projected Date	Status	Regulatory/ Voluntary
Forestry Best Management Practices	GA Forestry Commission GA EPD if enforcement	Protect streamside management zones and maintain canopy during harvesting	Current	In-progress	Voluntary (Violations of "Georgia Water Quality Act" may be pursued)

Pollutant(s) Affected	Sources of Pollutant(s)	Impacted Waterbodies*	Anticipated or Past Effectiveness
DO	Non point	Wards Creek	EPA identifies silviculture as the lowest contribution source of nonpoint pollution

Measurable Milestones	Schedule		Comments
	Start	End	
Increase in concentration of DO	01/03	01/05	Education of land owners & Buffer funding requests &
Wards Creek DO > Target of 1.08 mg/L	01/05	01/12	Adaptive monitoring

nce or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/ Projected Date	Status	Regulatory/Voluntary
USDA programs applicable to protecting riparian corridors such as the Conservation Reserve Program, Wetlands Reserve Program and Conservation Buffer Initiatives	USDA/NRCS	These programs serve to protect or restore riparian buffers which. These buffers may contain canopies that reduce sunlight penetration, stream warming and reduction of oxygen saturation. The buffers also filter fertilizer and organic wastes from runoff, which may in turn cause excessive algae growth and eventually depressed dissolved oxygen levels. By removing organic wastes, such as manure, the possibility of pathogen introduction is also reduced.	Current	In Progress	Voluntary

Pollutant(s) Affected	Sources of Pollutant(s)	Impacted Waterbodies*	Anticipated or Past Effectiveness
FC, DO	Non point	Wards Creek	

Measurable Milestones	Schedule Start	Schedule End	Comments
Increase in concentration of DO	01/03	01/05	Education of land owners & Buffer funding requests &
Wards Creek DO > Target of 1.08 mg/L	01/05	01/12	Adaptive monitoring

Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/ Projected Date	Status	Regulatory/ Voluntary
Reduce Dumping off bridges	Thomas County	Reduce trash and carcasses being dumped into the river tributaries-Education and Enforcement programs	Thomas Cty-10/02 Grady & Mitchell Cty ?/?	In progress proposed	Regulatory

Pollutant(s) Affected	Sources of Pollutant(s)	Impacted Waterbodies*	Anticipated or Past Effectiveness
DO	Oils, greases, carcasses	All Streams	Not effective

Measurable Milestones	Schedule Start	Schedule End	Comments
Reduction of trash observed	01/03	01/05	Educational programs, signs. monitoring via photography
Continued reduction of trash observed	01/05	01/12	Continue above actions

Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/ Projected Date	Status	Regulatory/ Voluntary
Reduce runoff from bridges	Thomas County	Implement measures to reduce runoff from un-improved and improved county roads	01/05	In planning	Voluntary

Pollutant(s) Affected	Sources of Pollutant(s)	Impacted Waterbodies*	Anticipated or Past Effectiveness
DO	Runoff from roads	All Streams	Unknown

Measurable Milestones	Schedule		Comments
	Start	End	
Experimental designs started	01/05	01/08	Application EPA Wetlands protection grant –pre-proposal 12/02
Begin monitoring test sites 01/05			

Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/ Projected Date	Status	Regulatory/ Voluntary
Georgia Planning Act	GA DNR, Local governments	To help prevent groundwater contamination, the Georgia Planning Act identifies groundwater recharge areas as critical natural resources and directs steps to help prevent contamination of groundwater. DNR has established minimum criteria for protection of groundwater recharge areas. DNR's minimum standards are to be used in developing and implementing local comprehensive plans. Local governments are directed to incorporate provisions for protection of groundwater recharge areas in local comprehensive plans and to adopt protective ordinances at least as stringent as the state standards developed by DNR. This protection of groundwater recharge should also have a positive although indirect impact on surface water quality.	ASAP	Planning	Regulatory

Pollutant(s) Affected	Sources of Pollutant(s)	Impacted Waterbodies*	Anticipated or Past Effectiveness
FC, DO	Runoff & over well pumping	All streams in the basin	Unknown

Measurable Milestones	Schedule		Comments
	Start	End	
Regulation are enforced	ASAP		

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Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/ Projected Date	Status	Regulatory/ Voluntary
Adaptive monitoring and watershed assesment	Thomas University	Collecting samples upstream from established sites to isolate and identify sources of pollution. EPD will contract with USGS to sample sites initially sampled in 1998. They will employ revised protocols to sample sites to avoid the impacts of extreme low flow or ponding which may have influenced DO samples collected in 1998 and the subsequent assessments for listing on the 303(d).	01/03	In planning	Voluntary

Pollutant(s) Affected	Sources of Pollutant(s)	Impacted Waterbodies*	Anticipated or Past Effectiveness
DO	To be determined	Entire basin	Anticipated- very effective

Measurable Milestones	Schedule		Comments
	Start	End	
Adaptive monitoring 1st cycle completed	01/03	01/04	Individuals, local govts, and EPD will be notified of the results
Increase concentration of DO	01/04	01/12	

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POTENTIAL FUNDING SOURCES 

The identification and discussion of dedicated funding is important in determining the economic feasibility of the above-mentioned management measures.

Funding Source	Responsible Authority	Status	Anticipated Funding Amount	Impacted Waterbodies*
Georgia EPD	Thomas University	In Planning	??	Entire basin
Archebold hospital Foundation	Friends of the Ochlockonee River	In Planning	??	Entire basin
EPA Wetlands Protection Program Grant	Thomas University	Preliminary Proposal Due on 02/12/02	To be determined	Entire basin
EPA 319 Grant	Thomas University & Local Govts	In Planning	To be Determined	Entire Basin
Williams Family Foundation	Friends of the Ochlockonee River	In Planning	To be Determined	Entire Basin
Woodruff Foundation	Thomas University To develop educational Materials	In Planning	To Be Determined	Entire Basin

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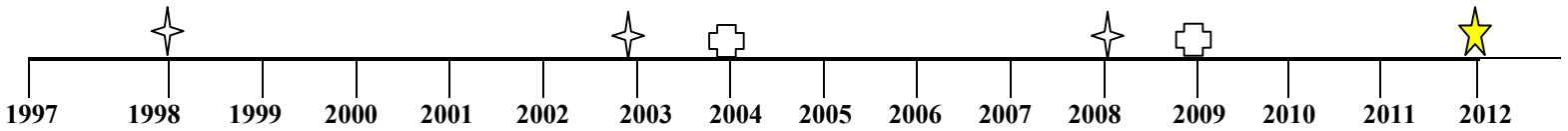
PROJECTED ATTAINMENT DATE

The projected date to attain and maintain water quality standards in this watershed is 10 years from acceptance of the TMDL Implementation Plan by EPD.



EPD Monitoring
Evaluate TMDL & Attainment Date
Project Attainment

MONITORING PLAN

The purpose of this monitoring plan is to determine the effectiveness of the target TMDL and the management measures being implemented to meet water quality standards. List of previous, current or planned/proposed sampling activities or other surveys. (Monitoring data that placed stream on 303(d) list will be provided if requested.)

Name Of Regulation / Ordinance Or Management Measure	Organization	Impacted Waterbodies*	Pollutants	Purpose/Description	Time Frame		Status (Previous, Current, Proposed)
					Start	End	
Initial monitoring	USGS/EPD	Entire Basin	DO & FC	To establish TMDLs	01/98	12/98	Previous
Selective Monitoring	Thomas University	Entire Basin	DO & FC	To develop monitoring Protocols And establish new monitoring sites	09/02	12/03	Current
EPD Monitoring	Thomas University	Established Sites	DO & FC/EC	To monitor the effectiveness of the above plans	01/03	01/04	Proposed
Adaptive Monitoring	Thomas University	303b streams	DO,FC, Turbidity Nutrients, etc	Identify and locate sources of pollutants in each identified stream	01/03	??	Proposed
Individual Industries	Industries	Various	DO, FC, Turbidity Nutrients	Monitor the affected stream above and below the industry for water quality	01/03	??	Voluntary program

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CRITERIA TO DETERMINE WHETHER SUBSTANTIAL PROGRESS IS BEING MADE

The following set of criteria will be used to determine whether any substantial progress is being made towards reducing pollutants in impaired waterbodies and attaining water quality standards. Discussion on each criteria is recorded in the space provided. Additional relevant criteria are presented in comments.

Percent of concentration or load change (monitoring program) Increasing trend in DO over a period of one year

If monitoring results show that it is unlikely that the TMDL will be adequate to meet water quality standards, revision of the TMDL may be necessary.

- Categorical change in classification of the stream (delisting the stream is the goal) DO in Wards Creek exceeds target of 1.08 mg/L,

- Regulatory controls or activities installed (ordinances, laws) Antidumping ordinances enacted by all counties, (already in effect in Thomas County) BMPs for forestry, agriculture and land disturbing activities integrated into all county ordinances,

- Best management practices installed (agricultural, forestry, urban) Forestry BMPs being followed – data from courtesy visits of the district forester, Agricultural BMPs being followed- data from stream buffer initiative and NRCS data; Urban BMPs being followed- increased DO downstream from cities

COMMENTS

Before definitive actions can be taken, specific, offenders, land owners, and industries must be identified. The proposed adaptive monitoring procedures will aid in identifying the specific sources of pollutants in streams that have non point pollution sources. With this knowledge, local and state governments will be able to enact or enforce existing statutes to correct the problem..

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Date Submitted to EPD: 12/19/02 as per EPD modifications

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Environmental Protection Division of the Department of Natural Resources, State of Georgia.

TOGETHER WE CAN MAKE A DIFFERENCE!